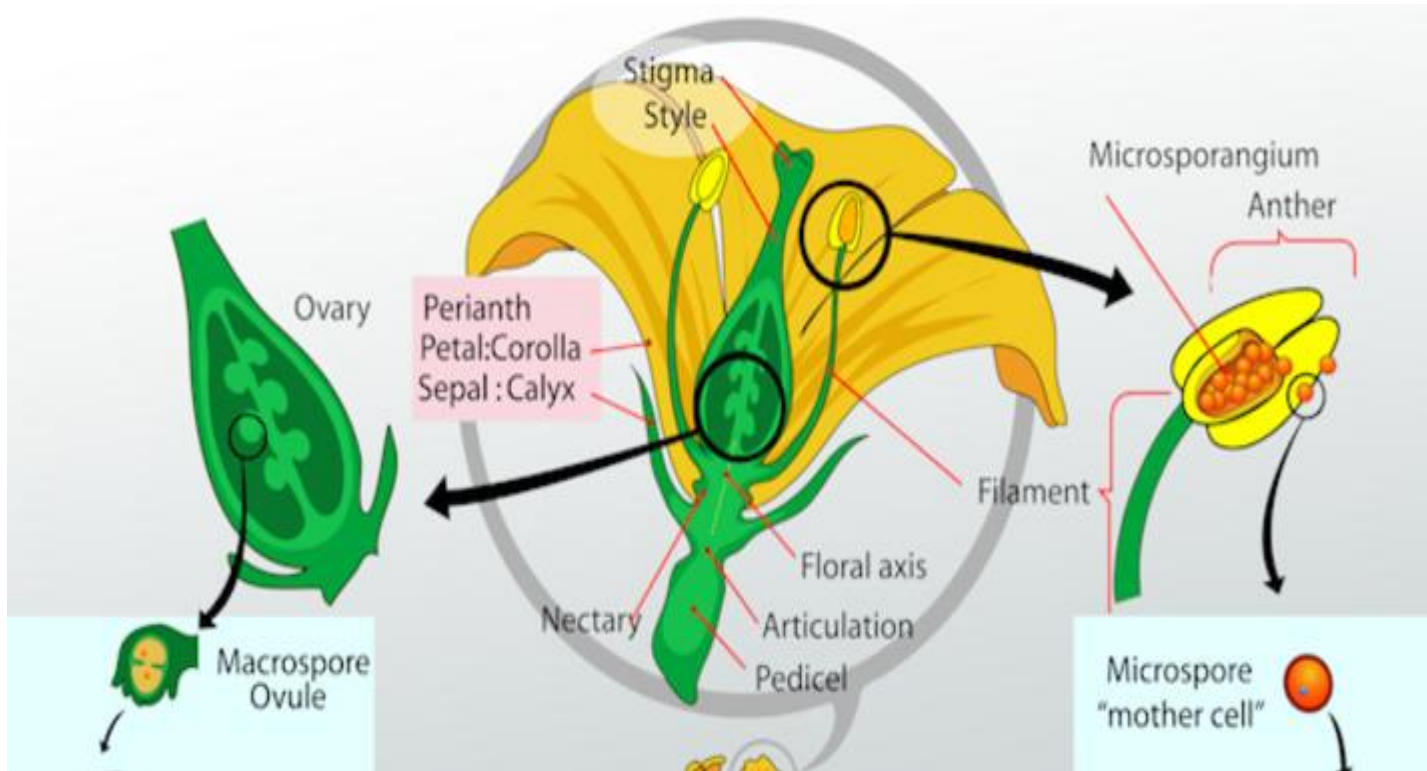




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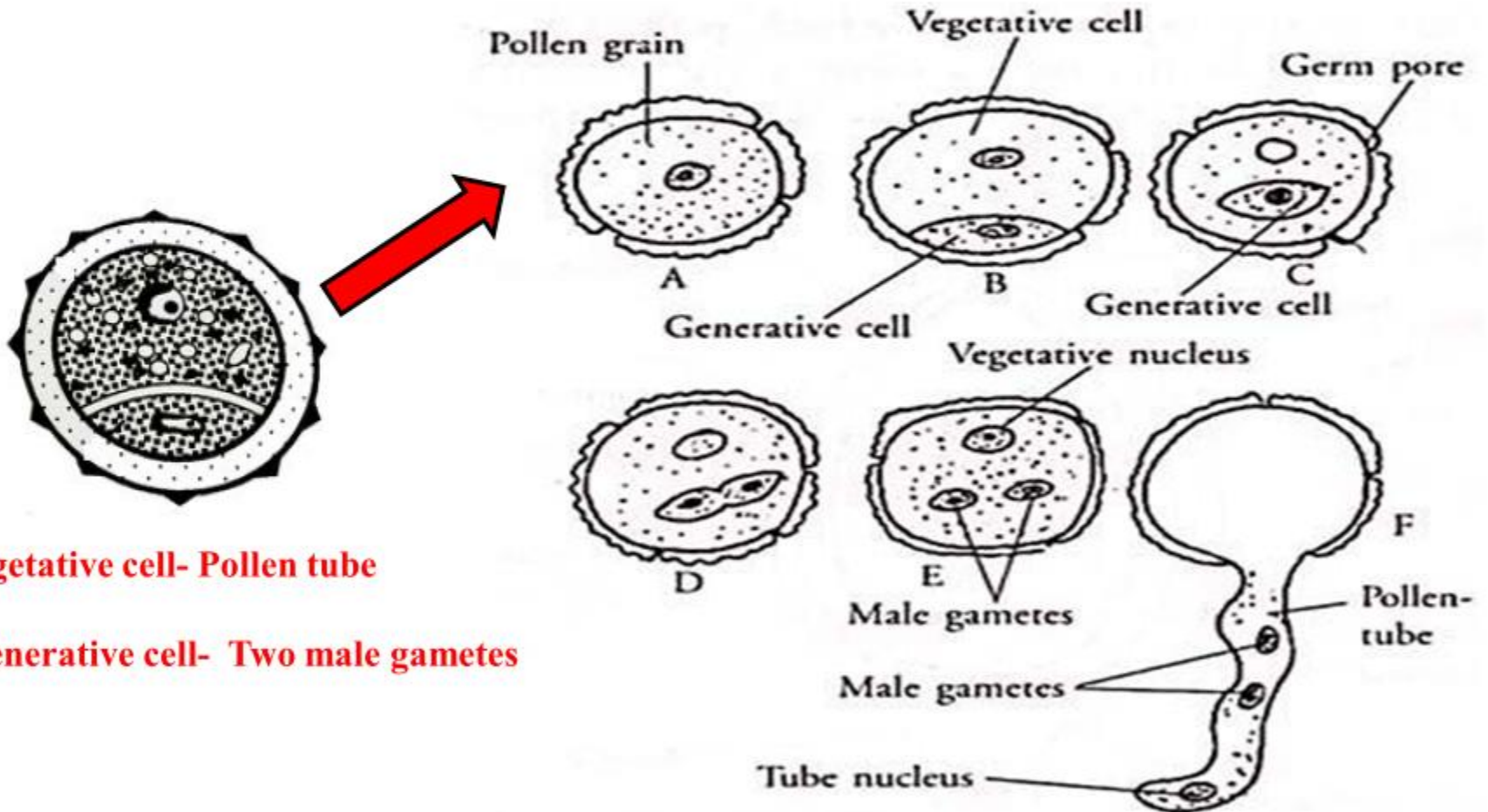
PPT Presentation for B.Sc. II- Fertilization in Angiosperm



Presented by - Dr. Amit Kishore Singh
Department of Botany
B.N. College, Bhagalpur

Microgametogenesis

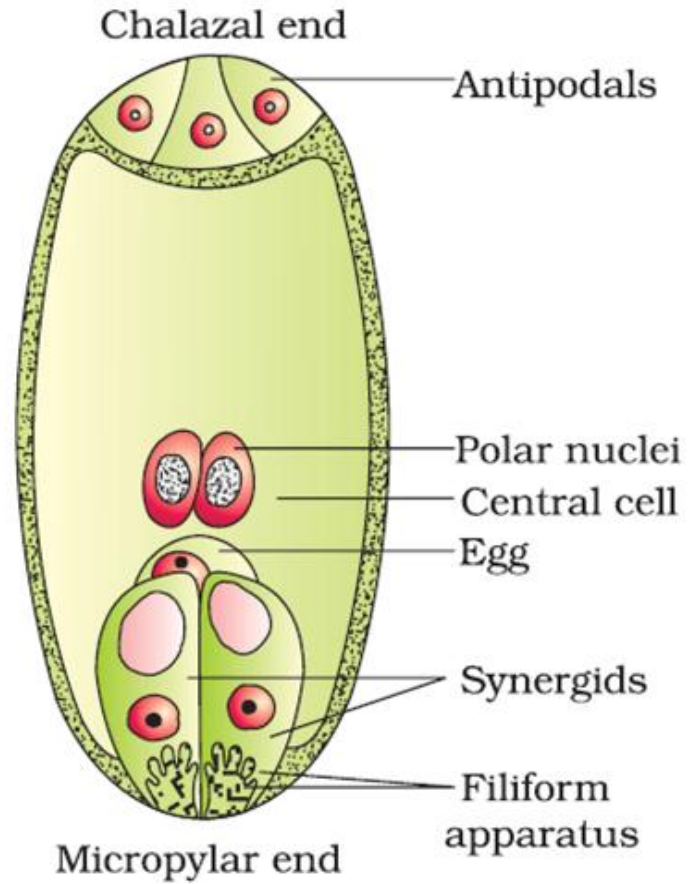
- **Microgametogenesis refers to development of male gamete**



• **Vegetative cell- Pollen tube**

• **Generative cell- Two male gametes**

Female gametophyte and female gamete



Fertilisation

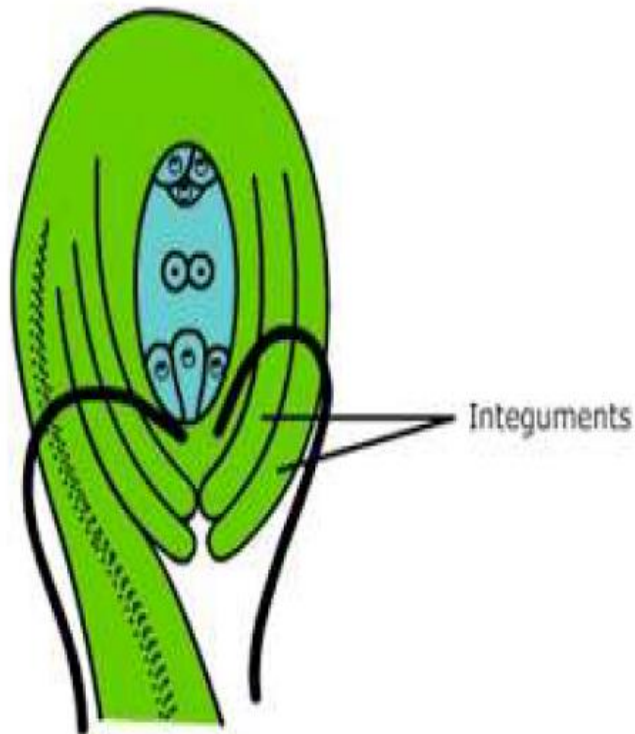
- ▶ Fertilisation is the fusion of the male (n) and female (n) gametes to produce a zygote (2n)
- ▶ The pollen grain produces the male gametes
- ▶ Embryo sac produces an egg cell and polar nuclei

Fertilisation

- ▶ Entry of pollen tube is 3 types
- ▶ A. Porogamy
- ▶ B. Mesogamy
- ▶ C. Chalazogamy

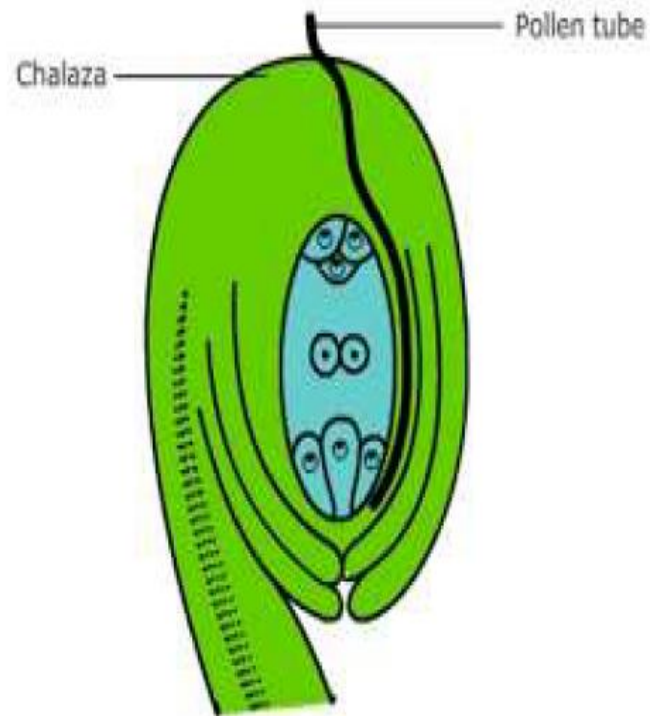
Fertilisation

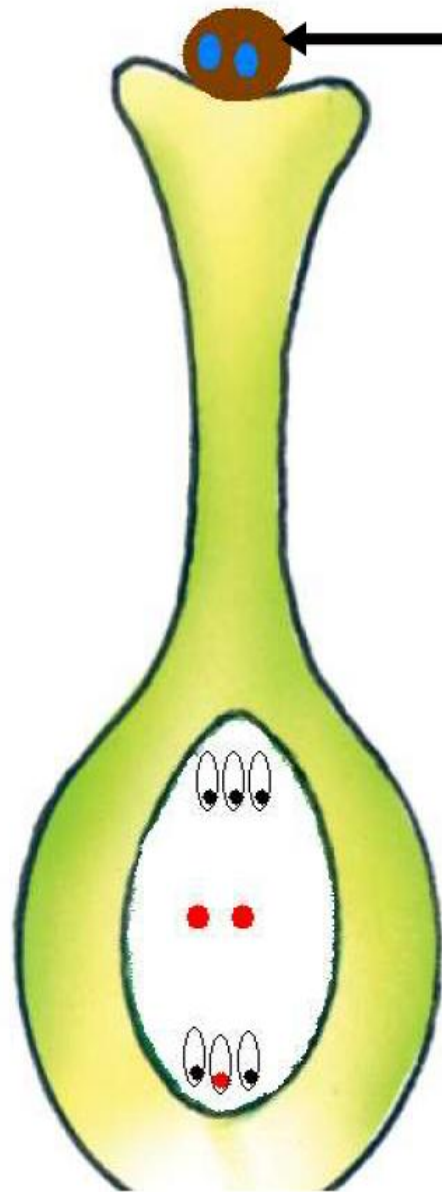
- ▶ **Mesogamy:** enters through integuments.



Fertilisation

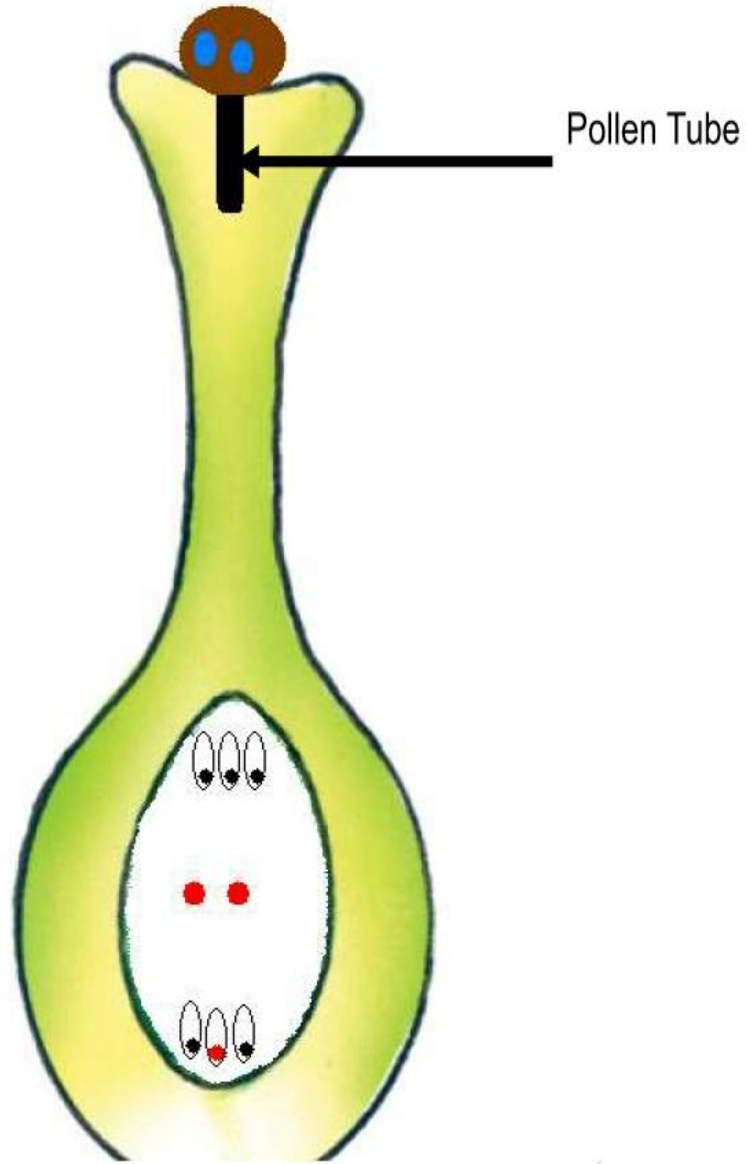
- ▶ **Chalazogamy:** enters through Chalaza.

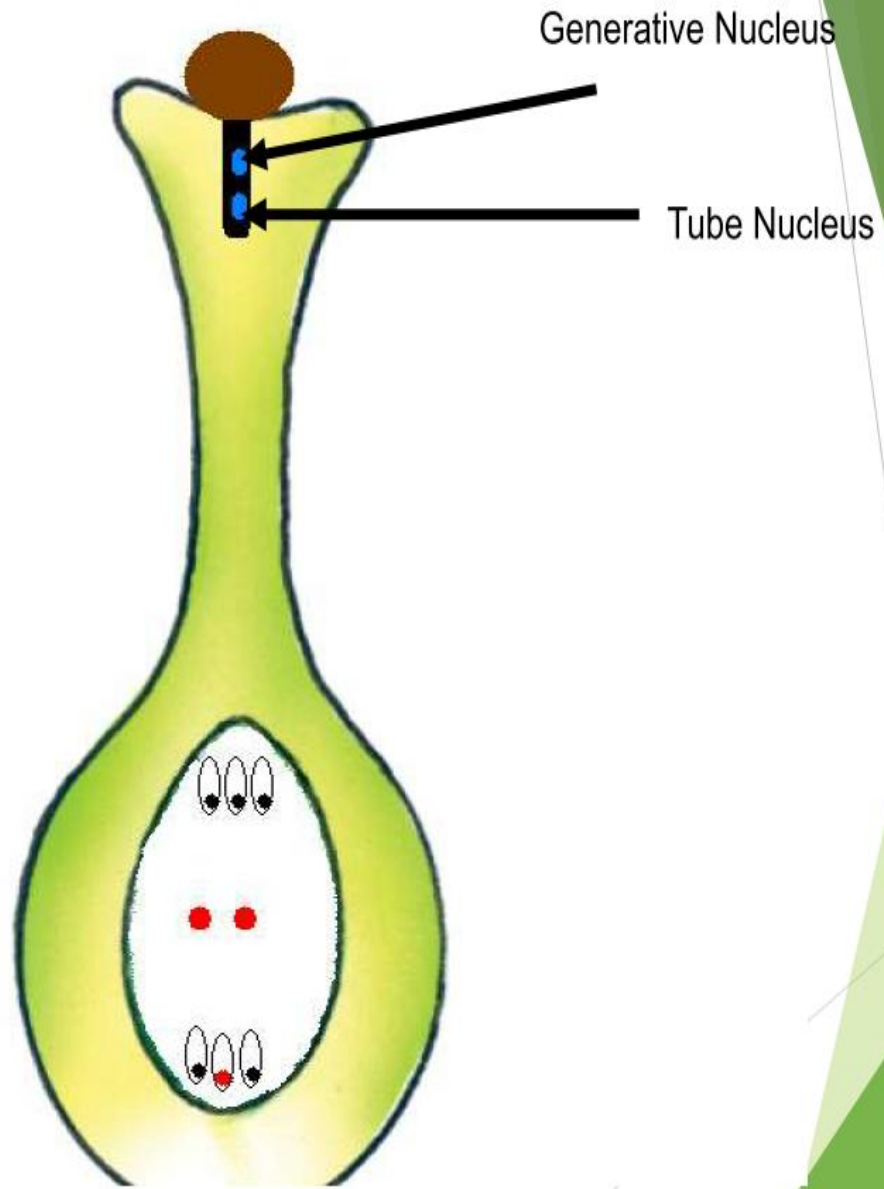


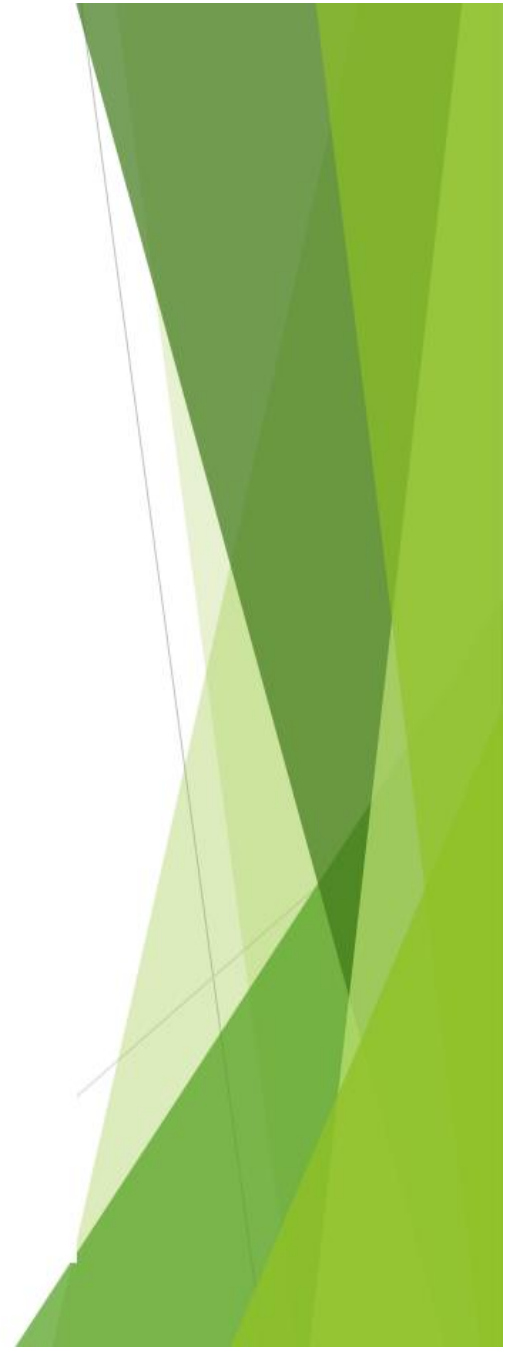
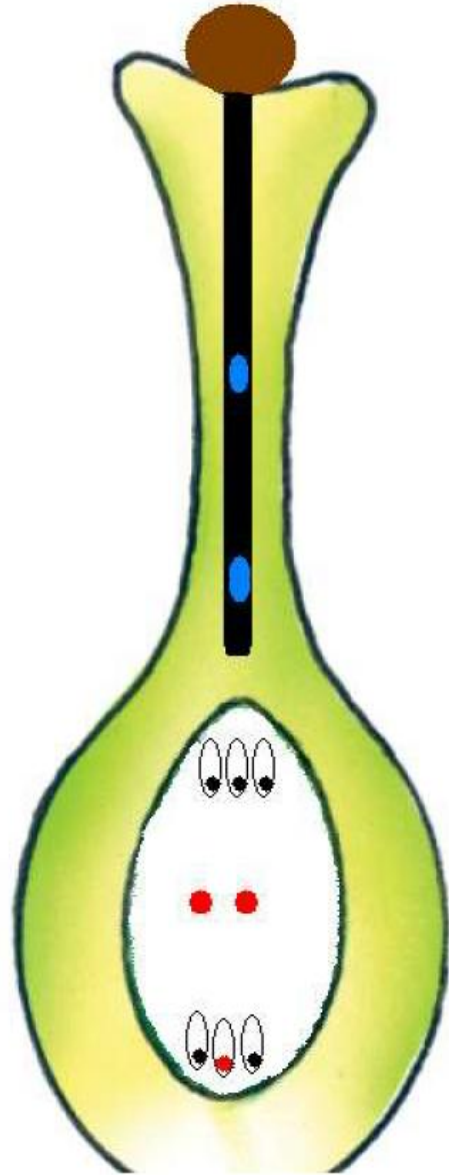


Pollen Grain

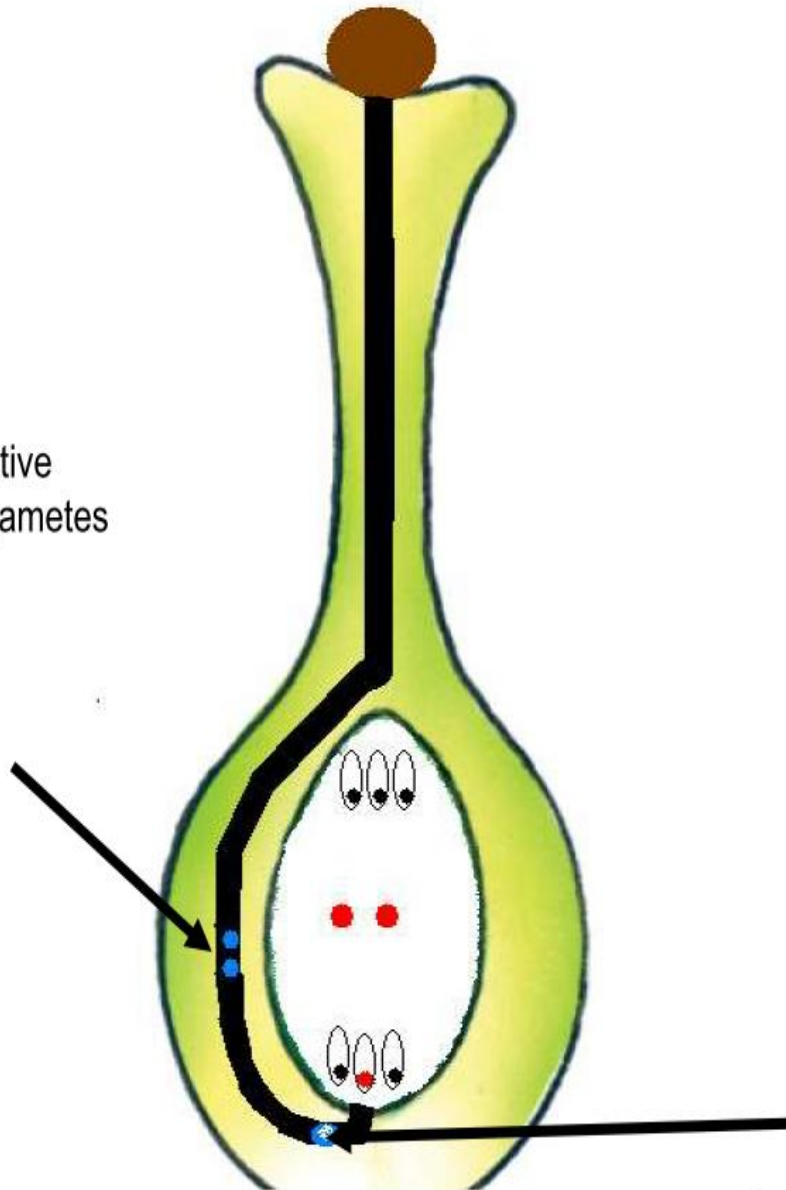




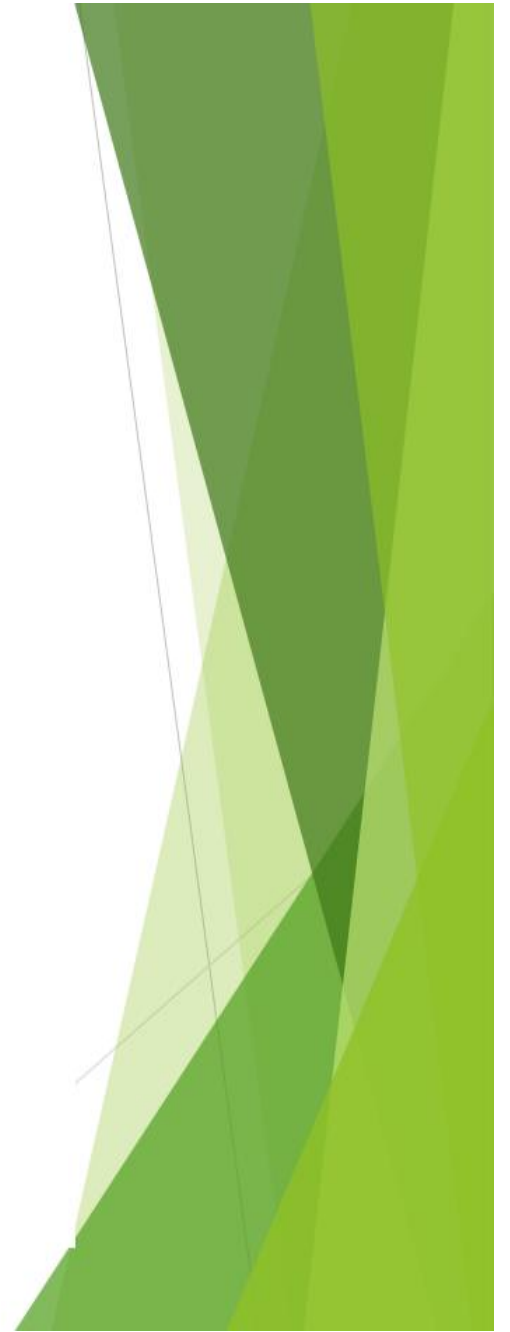
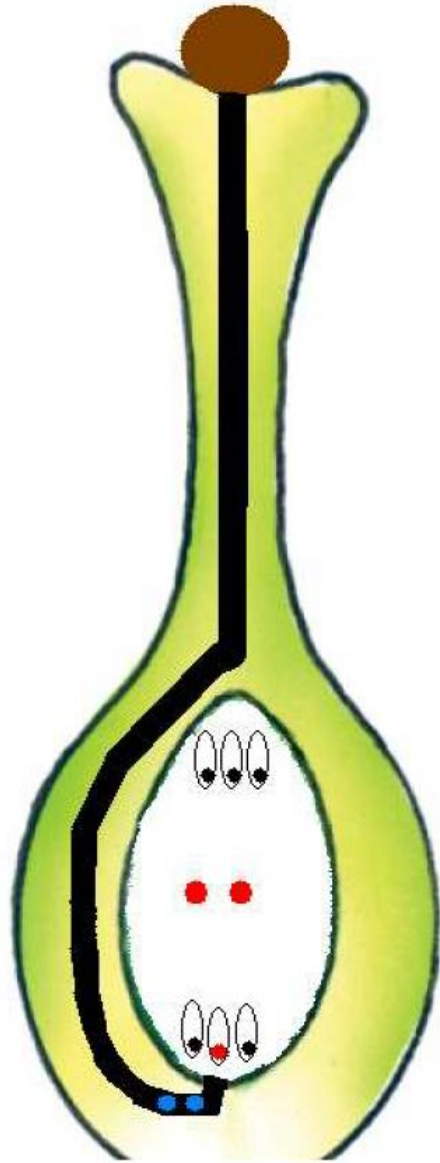


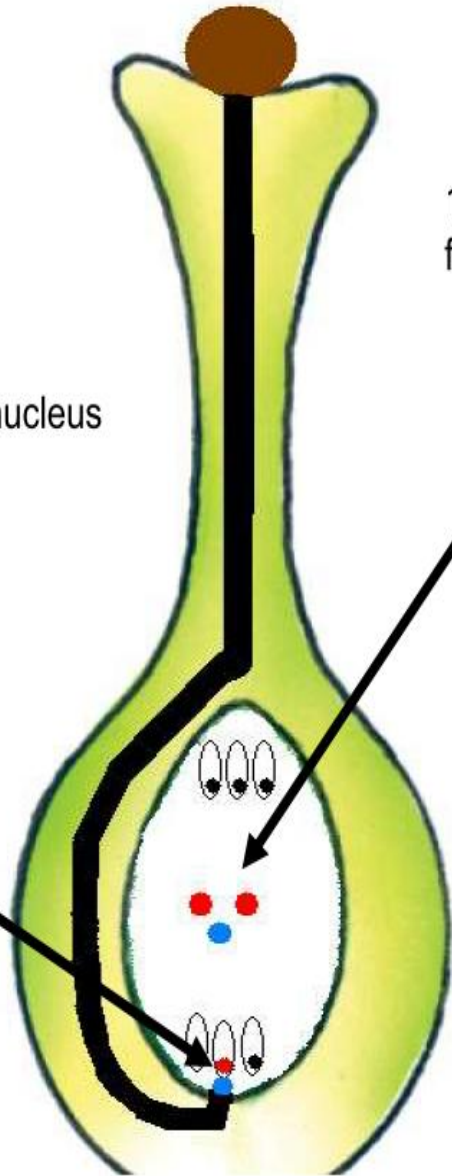


Mitotic division of generative nucleus to form 2 male gametes



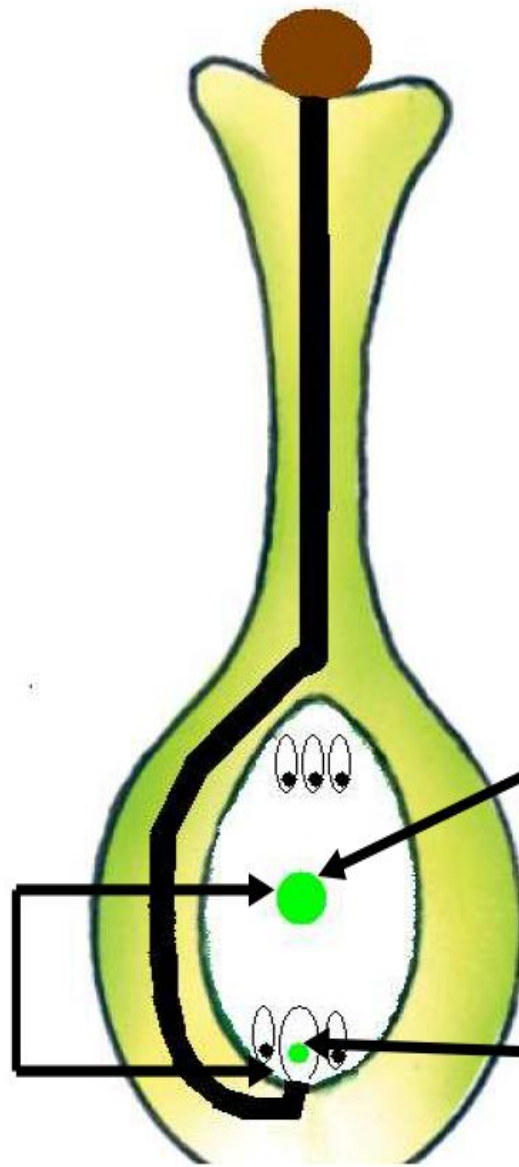
Tube nucleus disintegrates





1 male gamete fuses with the egg nucleus to form the diploid zygote

1 Male gamete fuses with the 2 polar nuclei to form the triploid endosperm nucleus



Double fertilisation

3N endosperm nucleus

2N Zygote

DOUBLE FERTILISATION (Syngamy and triple fusion)

Pollen tube into synergid

- the pollen tube releases the two male gametes into the cytoplasm of the synergid.

Syngamy

- the pollen tube releases the two male gametes into the cytoplasm of the synergid. **One male gamete fuse with egg cell** and produces zygote.
- Diploid Zygote formation - zygote develops into an embryo.

Triple fusion
3 haploid nucleus fuse

- other male gamete moves towards the two polar nuclei located in the central cell and fuses with them to produce a **triploid PEN** This central cell forms
- primary endosperm cell (PEC) and develops into the endosperm

THANK YOU